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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/523,481

01/31/2006

Jean Luc Couturier

FR-AM 1878 NP

3892

31684

7590

02/26/2009

ARKEMA INC.

PATENT DEPARTMENT - 26TH FLOOR

2000 MARKET STREET

PHILADELPHIA, PA 19103-3222

EXAMINER

HUHN, RICHARD A

ART UNIT

PAPER NUMBER

1796

MAIL DATE

DELIVERY MODE

02/26/2009

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<i>Office Action Summary</i>	Application No.	Applicant(s)	
	10/523,481	COUTURIER ET AL.	
	Examiner	Art Unit	
	RICHARD A. HUHNS	1796	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 09 January 2009.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1-16 and 21-23 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-16 and 21-23 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 04 February 2005 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)          | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)          | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date. _____   | 6) <input type="checkbox"/> Other: _____                          |

## DETAILED ACTION

Any rejections and/or objections, made in the previous Office Action, and not repeated below, are hereby withdrawn.

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

### *Response to Arguments*

1. Applicant's arguments 10 filed 9 January 2009, with respect to the rejection(s) of claim(s) 2-20 under 35 U.S.C. 103 have been fully considered. The arguments appearing on page 11 (the second and third full paragraphs) are not found persuasive. Applicant's arguments fail to comply with 37 CFR 1.111(b) because they amount to a general allegation that the claims define a patentable invention without specifically pointing out how the language of the claims patentably distinguishes them from the references. Applicant argues that Courtier '967 in view of Matyjaszewski '548 fails to obviate the present invention without providing specific evidence or reasoning for this assertion. Therefore, the rejection is maintained.

*Specification*

2. The abstract of the disclosure is objected to because it is insufficient in length. The abstract should be between 50 and 150 words in length. Applicant is reminded not to add content which may be considered new matter. Correction is required. See MPEP § 608.01(b).

*Claim Objections*

3. Claims 2, 3, 6, and 7 are objected to because of the following informalities: The claims lack a period at the end of the sentence. Appropriate correction is required.

4. Claims 5 and 7 are objected to under 37 CFR 1.75(c), as being of improper dependent form for failing to further limit the subject matter of a previous claim. Applicant is required to cancel the claim(s), or amend the claim(s) to place the claim(s) in proper dependent form, or rewrite the claim(s) in independent form. Claim 5 recites the limitation that R2 may be selected from CH<sub>3</sub> and (CH<sub>3</sub>)<sub>3</sub>C, and claim 7 recites the limitation that R2 is CH<sub>3</sub>. However, base claim 4 does not permit R2 to be a linear or branched alkyl radical such as CH<sub>3</sub> or (CH<sub>3</sub>)<sub>3</sub>C. Therefore, claims 5 and 7 do not meet the limitations of base claim 4.

*Double Patenting*

5. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

6. A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent either is shown to be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

7. Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

8. Claims 1-16 and 21-23 are rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1-24 of U.S. Patent No. 7,199,214. Although the conflicting claims are not identical, they are not patentably distinct from each other because US '214 discloses compounds according to instant formula (I) and polymers derived therefrom (see claim 1). While US '214 does not claim a method polymerizing monomers with the alkoxyamines, the reference discloses that this is an intended use of such compounds (see col 1 lines 10-16).

9. Case law holds that those portions of the specification which provide support for the patent claims may also be examined and considered when addressing the issue of

whether a claim in an application defines an obvious variation of an invention claimed in the patent. In re Vogel, 422 F.2d 438, 164 USPQ 619,622 (CCPA 1970). Therefore, it would have been obvious to one of ordinary skill in the art to polymerize monomers as presently claimed in claims 4-11 with alkoxyamines disclosed by US '214.

10. Claims 1-16 and 21-23 are rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1-9 of U.S. Patent No. 7,214,810. Although the conflicting claims are not identical, they are not patentably distinct from each other because US '810 discloses compounds according to instant formula (I) (see claim 1). While US '810 does not claim a method polymerizing monomers with the alkoxyamines, the reference discloses that this is an intended use of such compounds (see col 1 lines 50-57).

11. Case law holds that those portions of the specification which provide support for the patent claims may also be examined and considered when addressing the issue of whether a claim in an application defines an obvious variation of an invention claimed in the patent. In re Vogel, 422 F.2d 438, 164 USPQ 619,622 (CCPA 1970). Therefore, it would have been obvious to one of ordinary skill in the art to polymerize monomers as presently claimed in claims 4-11 with alkoxyamines disclosed by US '810.

12. Claims 1-16 and 21-23 are rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1-9 of copending application No. 11/692,377 (published as U.S. Patent Application Publication No. 2007/0167591).

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Although the conflicting claims are not identical, they are not patentably distinct from each other because US '377 discloses compounds according to instant formula (I) (see claim 1). While US '377 does not claim a method polymerizing monomers with the alkoxyamines, the reference discloses that this is an intended use of such compounds (see paragraph 3).

13. Case law holds that those portions of the specification which provide support for the patent claims may also be examined and considered when addressing the issue of whether a claim in an application defines an obvious variation of an invention claimed in the patent. In re Vogel, 422 F.2d 438, 164 USPQ 619,622 (CCPA 1970). Therefore, it would have been obvious to one of ordinary skill in the art to polymerize monomers as presently claimed in claims 4-11 with alkoxyamines disclosed by US '377.

14. Claims 1-16 and 21-23 are rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1-9 of copending application 11/596,306 (published as U.S. Patent Application Publication No. 2008/0221354). Although the conflicting claims are not identical, they are not patentably distinct from each other because US '306 discloses compounds according to instant formula (I) (see claim 1). While US '306 does not claim a method polymerizing monomers with the alkoxyamines, the reference discloses that this is an intended use of such compounds (see abstract).

15. Case law holds that those portions of the specification which provide support for the patent claims may also be examined and considered when addressing the issue of

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whether a claim in an application defines an obvious variation of an invention claimed in the patent. In re Vogel, 422 F.2d 438, 164 USPQ 619,622 (CCPA 1970). Therefore, it would have been obvious to one of ordinary skill in the art to polymerize monomers as presently claimed in claims 4-11 with alkoxyamines disclosed by US '306.

*Claim Rejections - 35 USC § 102*

16. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

17. Claims 5 and 7 are rejected under 35 U.S.C. 102(b) as being anticipated by *Macromolecular Symposia* 2002, 182, 225-247 (herein, "Mercier"). This screen-capture of the Wiley website shows that this document was publicly available as of 18 June 2002:

Design and use of  $\beta$ -phosphorus nitroxides and alkoxyamines in controlled "living" free radical polymerizations (p 225-247)  
Christophe Le Mercier, Sébastien Acorbis, Denis Bertin, Florence Chauvin, Didier Gliges, Olivier Guenet, Muriel Lemaire, Sylvain Marquis, François Le Moigne, Hanna Fischer, Paul Tordo  
Published Online: Jun 18 2002 6:45AM  
DOI: 10.1002/1521-3996(200206)182:1<225::AID-MASY225>3.0.CO;2-X



18. Mercier discloses compounds according to claims 5 and 7 in which the group R<sub>2</sub> is methyl or tert-butyl (see Table 3 on page 232). Mercier further discloses that the alkoxyamines disclosed therein may be used for polymerizations (see Introduction section beginning on page 225) as recited in base claim 4. In view of this, it is evident that the cited claims stand properly anticipated by Mercier.

19. Claims 1, 2, and 4-16 are rejected under 35 U.S.C. 102(e) as being anticipated by US Patent Application Publication No. 2003/0149205.

20. As to claims 1 and 2: US '205 discloses alkoxyamines according to instant formula (I) in which R<sub>1</sub>=H, R<sub>2</sub>=H, and R=alkyl (see paragraphs 19, 26, 27, and 35).

21. As to claims 4-6: US '205 discloses that the alkoxyamines disclosed therein may be used to polymerize monomers (see paragraph 49). The alkoxyamines will inherently have a kinetic dissociation constant within the claimed range. Case law holds that a material and its properties are inseparable. In re Spada, 911 F.2d 705, 709, 15 USPQ2d 1655, 1658 (Fed. Cir. 1990).

22. As to claim 7: US '205 discloses alkoxyamines according to instant formula (I) in which R<sub>1</sub>=H, R<sub>2</sub>=linear alkyl, which includes methyl, and R=alkyl (see paragraph 27).

23. As to claims 8-11: US '205 discloses that the monomers polymerized according to the method disclosed therein may include methyl methacrylate and butyl acrylate. The reference also anticipates copolymerization of these monomers (see paragraph 53).

24. As to claims 12-16: The polymerization of the monomers discussed above with the alkoxyamines discussed above will necessarily give polymers according to the instant claims.

25. In view of this discussion, it is evident that the cited claims stand properly anticipated by US '205.

*Claim Rejections - 35 USC § 103*

26. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

27. Claims 3 and 21-23 are rejected under 35 U.S.C. 103(a) as being unpatentable over US Patent Application Publication No. 2003/0149205, as applied above.

28. The discussion with respect to US '205 as applied above in paragraphs 20-24 is incorporated here by reference.

29. As applied above, US '205 discloses compounds according to instant formula (I) in which  $R_2=H$  (giving a carboxylic acid). US '205 fails to disclose the alkoxyamines of the instant claims in which  $R_2=Li, Na, \text{ or } K$ . However, it is within the ordinary level of skill in the art to prepare salts of known carboxylic acids. Furthermore, a person of ordinary skill in the art would expect the carboxylic acid and carboxylate to have similar properties. Therefore, it would have been obvious to a person of ordinary skill in the art

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at the time of the invention to have made the alkali metal salt of the alkoxyamines of US '205, and use the alkoxyamine to prepare polymers according to the method of US '205, thereby arriving at the present invention.

30. Claims 1-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over US Patent No. 6,569,967 in view of US Patent No. 5,763,548. This rejection appeared in the previous office action.

31. US '967 discloses compounds analogous to those of instant formula (I), such as the compound of instant claim 1 in which  $R^2$  = an alkyl group of 1-6 carbons. See US '967, claim 7, in which the following groups are selected:

- a.  $R^1 = H$
- b.  $R^2 = \text{tert-butyl}$
- c.  $R^3 = \text{tert-butyl}$
- d.  $R^4 = R^5 = \text{ethoxy}$
- e.  $R^6 = R^7 = \text{methyl}$
- f.  $R^8 = -(\text{CH}_2)_n-\text{C}(\text{O})\text{OR}^9$ , in which  $n = 0$  and  $R^9 = 1\text{-}6$  carbon alkyl.

32. US '967 fails to specifically name the compound of instant claim 2. However, US '967 discloses that the compounds of the general formula (I) (as recited in instant claim 1) may be made by the ATRA process (see col 2, lines 16-34; especially lines 32-34) with brominated carboxyl-group containing compounds, such as carboxylic esters, and copper (see col 5, example 4).

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33. US '548 discloses that brominated carboxylic esters are equivalent in function to brominated carboxylic acids for an ATRA process. For example, 2-bromoisobutyric acid is equivalent to ethyl 2-bromoisobutyrate (the ethyl ester of 2-bromoisobutyric acid). (See col 9, lines 34-46. Line 40 and 44-45 disclose these compounds as sources of radicals for ATRA reactions.)

34. It would have been obvious to a person of ordinary skill in the art to have used a brominated carboxylic acid (such as 2-bromoisobutyric acid) to make alkoxyamines according to the method of US '967 to give the compound of instant claim 2, because US '548 teaches that brominated carboxylic acids may be used in place of brominated carboxylic esters.

35. Claims 1-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over US Patent No. 6,569,967, as applied above.

36. The discussion with respect to US '967 as applied above in paragraphs 31-32 is incorporated here by reference.

37. As applied above, US '967 discloses alkoxyamines analogous to those of instant formula (I) in which  $R_2 = \text{alkyl}$ . US '967 further discloses the use of these alkoxyamines for polymerization of acrylates (see col 1 lines 1-10, and col 2 line 61). US '967 fails to disclose the alkoxyamines of the instant claims in which  $R_2 = \text{Li, Na, or K}$ . However, it is within the ordinary level of skill in the art to identify homologs and analogues of carboxylic esters (Applicant's attention is drawn to MPEP 2144.09). Therefore, it would have been obvious to a person of ordinary skill in the art to prepare homologs of the

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alkyl esters of the alkoxyamines disclosed in US '967, including a carboxylic acid and obvious variants thereof such as salts, thereby arriving at the present invention.

### *Conclusion*

38. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. The following documents disclose similar alkoxyamines:

- g. *Macromolecules* 2002, 35(22), 8323-8329
- h. US Patent No. 6,353,065
- i. US PGPub 2005/0215691

Any inquiry concerning this communication or earlier communications from the examiner should be directed to RICHARD A. HUHN whose telephone number is (571) 270-7345. The examiner can normally be reached on Monday to Friday, 7:30 AM to 5:00 PM EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Vasu Jagannathan can be reached on (571) 272-1119. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/R. A. H./  
Examiner, Art Unit 1796

/Vasu Jagannathan/  
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